

EXHIBIT "C"

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MEGABLAST 1.2.3-Paracel [2001-11-20]

Reference:

Zheng Zhang, Scott Schwartz, Lukas Wagner, and Webb Miller (2000),
 "A greedy algorithm for aligning DNA sequences",
J Comput Biol 2000; 7(1-2):203-14.

Database: Homo_sapiens.latestgp.fa
 26,679 sequences; 200,800,637,119 total letters

Query= 241id3
 (2853 letters)

| Score (bits) | E Value |
|---|------------|
| Sequences producing significant alignments: | |
| AP002986.2.1.157963 | 1899 0.0 |
| AP003459.2.1.28000 | 1528 0.0 |
| AL590714.27.1.133512 | 64 5e-07 |
| AP001599.1.1.118241 | 62 2e-06 |
| AP001598.1.1.171038 | 62 2e-06 |

>AP002986.2.1.157963
 Length = 157963

Score = 1899 bits (958), Expect = 0.0
 Identities = 958/958 (100%)
 Strand = Plus / Plus

Query: 1 atgcttctgctggcatcctaaccctggcttcgcgcggcgaaaccgctggaggctctgag 60
 |||||||
 Sbjct: 134115 atgcttctgctggcatcctaaccctggcttcgcgcggcgaaaccgctggaggctctgag 134174

① Query: 61 ccagagcgggaggtagtcgttccatccgactggacccggacattaacggccggcgtac 120
 |||||||
 Sbjct: 134175 ccagagcgggaggtagtcgttccatccgactggacccggacattaacggccggcgtac 134234

Query: 121 tactggcggtcccgaggactccggatcaggactcattttcagatcacagcattt 180
 |||||||
 Sbjct: 134235 tactggcggtcccgaggactccggatcaggactcattttcagatcacagcattt 134294

Query: 181 caggaggactttacacctacacgtacgcggatgctcagttttggctccgccttctcc 240
 |||||||
 Sbjct: 134295 caggaggactttacacctacacgtacgcggatgctcagttttggctccgccttctcc 134354

Query: 241 actgagcatctggcgccccctccaggggctcacccgggtcttcagacctgcgacgc 300
 |||||||
 Sbjct: 134355 actgagcatctggcgccccctccaggggctcacccgggtcttcagacctgcgacgc 134414

Query: 301 tgcttctattctgggacgtgaacgccgagccggactcgttcgctgtgagccgtgc 360
 |||||||

Sbjct: 134415 tgcttctattctggggacgtgaacgccgagccggactcgttcgctgtgc 134474

Query: 361 gggggggctccgcggagccctttagctaccggaggcgccgagttatgtcattagcccgctgccc 420

Query: 421 aatgtctaggcccccccccggccggccaaacggccaggccggcggcacacaccttctccggcgccgg 480

124584

Quality: 100% 99.99999999999999% 100% 100%

Query: 601 agtcgttagccggcgacggctctgggcgcggcaagcgttctgttatccccggtaacgtg 660

Query: 661 gagacgcgtggggtcgcggacgaggtaatggtcaagttccacggcgccgacctggAACAT 720

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Subjct: 134835 tatctgctgacgctgctggcaacggcgccacttaccgccatcccagcatcctcaac 134

sbjct: 134895 cccatcaacatcgltcggtggccaaggcgcttcggatcgatccccggggccaaag 134954

Query: 841 gtcaccggcaatgcggccctgacgctgcgcacacttgtgcggcagaayaagctyaa 900

Subjct: 134955 gtcacccggcaatggcgccctgacgcgtgcgaacttctgtgcctggcagaagaagctaac 135014

Query: 901 aaagtgagtgacaaggccccgagttactgggacactgccatcctttcaccaggcagg 958

Score = 571 bits (288), Expect = e-160

Identities = 288/288 (100%)

Strand = Plus / Plus

Query: 1258 ggtgactgcctcctggaccaaccagcaaggccatctccctgcccggaggatctgccgggc 1317

Sbjct: 147637 |||||||ggtaactgcctcctggaccaaccaggcaagccatctccctgcccaggatctgcgggc 147696

Query: 1318 gccagctacaccctgagccagcagtgcgagctggctttggcgtggctccaaggccctgt 1377

Sbjct: 147697 gccagctacaccctgagccagcagtgcgagctggctttggcgtggctccaaggccctgt 147756

Query: 1378 ctttacatgcagtaactgcaccaagctgtggtcaccggaaaggccaaggacagatggtg 1437

Sbjct: 147757 ctttacatgcagtaactgcaccaagctgtggtcaccggaaaggccaaggacagatggtg 147816

Query: 1438 tgccagaccgcacttccctggccatggcaccagctgtggcgaggcaagctctgc 1497

Sbjct: 147817 tgccagaccgcacttccctggccatggcaccagctgtggcgaggcaagctctgc 147876

Query: 1498 ctcaaaggggcctgcgtggagagacacaacctaacaaggcacagggtg 1545

Sbjct: 147877 ctcaaaggggcctgcgtggagagacacaacctaacaaggcacagggtg 147924

Score = 371 bits (187), Expect = 2e-99

Identities = 187/187 (100%)

Strand = Plus / Plus

Query: 1719 agcctccggaaagagacttccggaggaggcagtgtgaggcttcaacggctacaaccacag 1778

Sbjct: 156059 agcctccggaaagagacttccggaggaggcagtgtgaggcttcaacggctacaaccacag 156118

Query: 1779 caccaaccggctcactctgcgcgtggcatgggtgcccaagtactccggcgtgtctcccg 1838

Sbjct: 156119 caccaaccggctcactctgcgcgtggcatgggtgcccaagtactccggcgtgtctcccg 156178

Query: 1839 ggacaagtgcagactcatctggcgagccaatggcactggctacttctatgtgctggcacc 1898

Sbjct: 156179 ggacaagtgcagactcatctggcgagccaatggcactggctacttctatgtgctggcacc 156238

Query: 1899 caaggtg 1905

Sbjct: 156239 caaggtg 156245

Score = 355 bits (179), Expect = 1e-94

Identities = 179/179 (100%)

Strand = Plus / Plus

Query: 1901 aggtgggtggacggcacgctgtgctctccctgactccacacctccgtctgtgtccaaggcaagt 1960

Sbjct: 156347 aggtgggtggacggcacgctgtgctctccctgactccacacctccgtctgtgtccaaggcaagt 156406

Query: 1961 gcatcaaggctggctgtatggAACCTGGCTCCAAGAAGAGATTGACAGACTGTGGGG 2020
Sbjct: 156407 gcatcaaggctggctgtatggAACCTGGCTCCAAGAAGAGATTGACAGACTGTGGGG 156466

Query: 2021 tgtgtggggagacaataagagctgcaagaaggtaactggactttcaccaagccatg 2079
Sbjct: 156467 tgtgtggggagacaataagagctgcaagaaggtaactggactttcaccaagccatg 156525

Score = 355 bits (179), Expect = 1e-94
Identities = 183/184 (99%), Gaps = 1/184 (0%)
Strand = Plus / Plus

Query: 1537 cacagggtggatggttcctggccaaatggatccatatggccctgtcgacatgt 1596
Sbjct: 154398 caca-ggtggatggttcctggccaaatggatccatatggccctgtcgacatgt 154456

Query: 1597 ggtggggcgtgcagctggccaggaggcagtgcaccaacccacccctgccaacggggc 1656
Sbjct: 154457 ggtggggcgtgcagctggccaggaggcagtgcaccaacccacccctgccaacggggc 154516

Query: 1657 aagtactgcaggagtgagggtgaaataccgatccatgtcaatctggagccctgccccagc 1716
Sbjct: 154517 aagtactgcaggagtgagggtgaaataccgatccatgtcaatctggagccctgccccagc 154576

Query: 1717 tcag 1720
Sbjct: 154577 tcag 154580

Score = 339 bits (171), Expect = 6e-90
Identities = 171/171 (100%)
Strand = Plus / Plus

Query: 1090 ggccacgtgttcaacatgccccatgacaatgtgaaagtctgtgaggagggtttggaaag 1149
Sbjct: 147227 ggccacgtgttcaacatgccccatgacaatgtgaaagtctgtgaggagggtttggaaag 147286

Query: 1150 ctccgagccaaccacatgatgtccccgaccctcatccagatcgaccgtgccaacccctgg 1209
Sbjct: 147287 ctccgagccaaccacatgatgtccccgaccctcatccagatcgaccgtgccaacccctgg 147346

Query: 1210 tcagcctgcagtgtgccatcatcaccgacttcctggacagcgggcacggt 1260
Sbjct: 147347 tcagcctgcagtgtgccatcatcaccgacttcctggacagcgggcacggt 147397

Score = 278 bits (140), Expect = 2e-71

Identities = 143/144 (99%)
Strand = Plus / Plus

Query: 948 caccaggcaggacctgtgtggagccaccacctgtgacaccctggcatggctatgtggg 1007
||||| ||||| ||||| ||||| |||||
Sbjct: 146620 caccaggcaggacctgtgtggagccaccacctgtgacaccctggcatggctatgtggg 146679

Query: 1008 taccatgtgtgaccccaagagaagactgctctgtcattgaggacatggcttcatcagc 1067
||||| ||||| ||||| ||||| |||||
Sbjct: 146680 taccatgtgtgaccccaagagaagactgctctgtcattgaggacatggcttcatcagc 146739

Query: 1068 ctccaccactgcccacgagctggg 1091
||||| ||||| ||||| |||||
Sbjct: 146740 ctccaccactgcccacgagctggg 146763

>AP003459.2.1.28000
Length = 28000

Score = 1528 bits (771), Expect = 0.0
Identities = 774/775 (99%)
Strand = Plus / Plus

Query: 2079 gcatggctacaattcgtggccatccccgcaggcgcccaagcatcgacatccgcca 2138
||||| ||||| ||||| |||||
Sbjct: 3473 gcatggctacaattcgtggccatccccgcaggcgcccaagcatcgacatccgcca 3532

Query: 2139 ggcgggttacaaagggtatcgggatgacaactacacctggctctgaagaacagccaagg 2198
||||| ||||| ||||| |||||
Sbjct: 3533 ggcgggttacaaagggtatcgggatgacaactacacctggctctgaagaacagccaagg 3592

Query: 2199 caagtacctgctcaacgggcattcgtgggtcgccggtgagcgggacctgggtgaa 2258
||||| ||||| ||||| |||||
Sbjct: 3593 caagtacctgctcaacgggcattcgtgggtcgccggtgagcgggacctgggtgaa 3652

Query: 2259 gggcagtctgctcggtacagcggcacgggcacagcggtgagagcctgcaggctcccg 2318
||||| ||||| ||||| |||||
Sbjct: 3653 gggcagtctgctcggtacagcggcacgggcacagcggtgagagcctgcaggctcccg 3712

Query: 2319 gcccatcctggagccgctgaccgtggaggctctccgtggggaaagatgacaccgcccc 2378
||||| ||||| ||||| |||||
Sbjct: 3713 gcccatcctggagccgctgaccgtggaggctctccgtggggaaagatgacaccgcccc 3772

Query: 2379 ggtccgctactccttatctgcccaaagagcctcgaggacaagtccatccaa 2438
||||| ||||| ||||| |||||
Sbjct: 3773 ggtccgctactccttatctgcccaaagagcctcgaggacaagtccatccaa 3832

Query: 2439 ggaccccccggggaccctctgtctgcacaacagcgtcctcagccctccaaaccagggtgga 2498
||||| ||||| ||||| |||||

Sbjct: 3833 ggaccccccggggaccctctgtcttgacaaatagcgtcctcagcctctccaaccagggtgga 3892

Query: 2499 gcagccggacgacaggccccctgcacgctgggtggctggcagctggggccgtgctccgc 2558

Sbjct: 3893 gcagccggacgacaggccccctgcacgctgggtggctggcagctggggccgtgctccgc 3952

Query: 2559 gagctgcggcagtggcctgcagaagcggcggtggactgtcgggctccggcggcagcg 2618

Sbjct: 3953 gagctgcggcagtggcctgcagaagcggcggtggactgcgggctccggcggcagcg 4012

Query: 2619 cacggtccctgcctgtatgcagccatcgccccgtggagacacaaggctgcgggagcc 2678

Sbjct: 4013 cacggtccctgcctgtatgcagccatcgccccgtggagacacaaggctgcgggagcc 4072

Query: 2679 ctgccccacctggagctcagcgcctggcacccctgtccaagagactgcggccgggatt 2738

Sbjct: 4073 ctgccccacctggagctcagcgcctggcacccctgtccaagagactgcggccgggatt 4132

Query: 2739 tcagaggcgctcactcaagtgtggccacggaggccggctgtggccgggaccagtg 2798

Sbjct: 4133 tcagaggcgctcactcaagtgtggccacggaggccggctgtggccgggaccagtg 4192

Query: 2799 caacttgcacccgaagccccaggagctggacttctgcgtcctgaggccgtgtga 2853

Sbjct: 4193 caacttgcacccgaagccccaggagctggacttctgcgtcctgaggccgtgtga 4247

Score = 371 bits (187), Expect = 2e-99

Identities = 187/187 (100%)

Strand = Plus / Plus

Query: 1719 agcctccggaaagagacttcgggaggaggcagtgtgaggcttcaacggctacaaccacag 1778

Sbjct: 1344 agcctccggaaagagacttcgggaggaggcagtgtgaggcttcaacggctacaaccacag 1403

Query: 1779 caccaaccggctcactctcgccgtggcatgggtgccaagtaactccggcgtgtctcccg 1838

Sbjct: 1404 caccaaccggctcactctcgccgtggcatgggtgccaagtaactccggcgtgtctcccg 1463

Query: 1839 ggacaagtgcacatctgccgagccaatggcactggctacttctatgtgctggcacc 1898

Sbjct: 1464 ggacaagtgcacatctgccgagccaatggcactggctacttctatgtgctggcacc 1523

Query: 1899 caaggtg 1905

|||||||

Sbjct: 1524 caaggtg 1530

Score = 355 bits (179), Expect = 1e+94
Identities = 179/179 (100%)
Strand = Plus / Plus

Query: 1901 aggtggtgacggcacgctgtgtctcctgactccacccgtctgtgtccaaggcaagt 1960
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Sbjct: 1632 aggtggtgacggcacgctgtgtctcctgactccacccgtctgtgtccaaggcaagt 1691

Query: 1961 gcatcaaggctggctgtatggAACCTGGCTCCAAGAAGAGATTGACAGTGTGGGG 2020
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Sbjct: 1692 gcatcaaggctggctgtatggAACCTGGCTCCAAGAAGAGATTGACAGTGTGGGG 1751

Query: 2021 tgtgtggggagacaataagagagctgcaagaaggtaactggactttaccaagccccatg 2079
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Sbjct: 1752 tgtgtggggagacaataagagagctgcaagaaggtaactggactttaccaagccccatg 1810

>AL590714.27.1.133512
Length = 133512

Score = 63.9 bits (32), Expect = 5e-07
Identities = 59/68 (86%)
Strand = Plus / Minus

Query: 955 caggacctgtgtggagccaccacccgtgacaccctggcatggctatgtggtaccatg 1014
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Sbjct: 51486 caggacctgtgtggagtctccacttgcacacgctggatggctatgtggcaccgtc 51427

Query: 1015 tgtgaccc 1022
||| |||
Sbjct: 51426 tgtgaccc 51419

>AP001599.1.1.118241
Length = 118241

Score = 61.9 bits (31), Expect = 2e-06
Identities = 43/47 (91%)
Strand = Plus / Minus

Query: 1839 ggacaagtgcAAAGCTCATCTGCCGAGCCATGGCACTGGCTACTTCT 1885
||| ||| ||| ||| ||| ||| ||| ||| ||| |||
Sbjct: 42122 ggacagggtgcAAAGCTCATCTGCCAAGCCAAAGGCATTGGCTACTTCT 42076

Score = 48.1 bits (24), Expect = 0.031
Identities = 30/32 (93%)
Strand = Plus / Minus

Query: 1450 cacttcccctggccatggcaccagctgtgg 1481

Sbjct: 42840 cacttccgtggcgatggcaccagctgtgg 42809
||||||| ||||| ||||||||| |||||
|

>AP001598.1.1.171038
Length = 171038

Score = 61.9 bits (31), Expect = 2e-06
Identities = 43/47 (91%)
Strand = Plus / Minus

Query: 1839 ggacaagtgcagaagtcatctgccgagccaatggcactggctacttct 1885
||||||| ||||| ||||| ||||| ||||| ||||| ||||| |||||
Sbjct: 163850 ggacaggtgcagaagtcatctgccaaggcattggctacttct 163804

Score = 48.1 bits (24), Expect = 0.031
Identities = 30/32 (93%)
Strand = Plus / Minus

Query: 1450 cacttcccctgggccatggcaccagctgtgg 1481
||||||| ||||| ||||| |||||
Sbjct: 164568 cacttccgtggcgatggcaccagctgtgg 164537

Database: Homo_sapiens.latestgp.fa
Posted date: Jul 8, 2003 12:51 PM
Number of letters in database: 200,800,637,119
Number of sequences in database: 26,679

Lambda K H
1.37 0.711 1.31

Gapped
Lambda K H
1.37 0.711 1.31

Matrix: blastn matrix:1 -3
Gap Penalties: Existence: 0, Extension: 0
Number of Hits to DB: 0
length of query: 5708
length of database: 200,800,637,119
effective HSP length: 22
effective length of query: 2831
effective search space used: 0
T: 0
A: 0
X1: 0 (0.0 bits)
X2: 20 (39.6 bits)
S1: 12 (24.3 bits)
S2: 24 (48.1 bits)